



# FACTS

ABOUT THE SAVANNAH RIVER SITE

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## Saltstone Facility

The Saltstone Facility (Saltstone) safely stabilizes and disposes of low-activity liquid radioactive wastes produced and stored at the Savannah River Site.

The Saltstone Facility consists of two facility segments: Saltstone Production Facility (SPF) and Saltstone Disposal Facility (SDF). Construction of SPF and the first two vaults of SDF was completed between February 1986 and July 1988. The Saltstone Facility started radioactive operations on June 12, 1990. Since that time, it has been operated on an intermittent, as-needed basis to immobilize and dispose of low-activity liquid waste from the Effluent Treatment Project, which processes waste from the site's two chemical separation facilities as well as from the tank farms.

Most of the tank farm waste on site is to be converted into two waste forms: Glass, which will contain about 99 percent of the radioactivity, and Saltstone grout, which will contain most of the volume. The high-activity, insoluble sludge is sent to the Defense Waste Processing Facility (DWPF) to be turned into glass. Soluble salts, primarily sodium nitrate (similar to fertilizer), must be treated to remove the radionuclides that are contained in the salt solution. Starting in 2011, this separation will be accomplished in the Salt Waste Processing Facility (SWPF); however, until the startup of SWPF, several interim processes will be used to accomplish this activity for a small volume of waste. The highly radioactive contaminants (cesium, strontium, actinides) removed from the salt waste will be sent to the DWPF, where they will be combined with sludge, turned into glass, and contained in sealed stainless steel canisters.

SPF will receive the low-activity treated salt solution and stabilize it by mixing the salt solution with cementitious dry materials (cement, fly ash, and slag). The resulting grout mixture, or slurry, will be mechanically pumped into the engineered disposal vaults that make up the SDF. There the grout solidifies into a non-hazardous low-activity waste form called "saltstone."

The large concrete vaults are divided into sections (called cells). Each cell is 100 feet long, 100 feet wide and 25 feet tall. Currently two vaults exist at the facility, one with 12 cells and one with six cells. Each vault is partially full. After filling, the vault will be capped with clean concrete to isolate it from the environment. Final closure of the area will consist of covering the vaults with engineered closure caps and backfilling with earth.

Extensive testing and analysis has concluded that the waste planned for disposal via the SDF will not result in releases of radioactive material to the environment that would exceed the Environmental Protection Agency drinking water standards. Wells near the edge of the disposal site are used to monitor groundwater to ensure that it meets the applicable standards.

The Saltstone Facility has recently been modified to improve its reliability and maintainability and DOE will soon seek permission from SCDHEC to resume operations. Additional vaults will be constructed over the next

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**The WSRC Team:** Washington Savannah River Company LLC • Bechtel Savannah River, Inc. • BNG America Savannah River Corporation • BWXT Savannah River Company • CH2 Savannah River Company

15 years to receive and store the salt waste planned for stabilization through the end of the radioactive liquid waste cleanup program.

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